TESTIMONY OF
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Before the

HOUSE GOVERNMENT REFORM COMMITTEE
Subcommittee on National Security, Emerging Threats, and International Relationship

Concerning

Homeland Security: Surveillance and Monitoring of Explosive Storage Facilities, Part II

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Good morning, Mr. Chairman and Members of the Subcommittee. I am Tibor G Rozgonyi, Professor and Head of the Mining Engineering Department at Colorado School of Mines. I appreciate the opportunity to appear before you today to provide testimony on the subject entitled Homeland Security: Surveillance and Monitoring of Explosive Storage Facilities, Part II, with specific emphasis on "ATF: Thefts of Explosives from State and Local Government Storage Facilities Are Few, But May be Underreported" and the efforts implemented at Colorado School of Mines (CSM) to improve explosives storage facility security.

Please allow me to briefly introduce to you Colorado School of Mines, the first public institution of higher learning to open its doors in Colorado. Established in 1874 to serve the needs of the local mining industry, CSM now enjoys an international reputation of excellence in engineering and the applied sciences, with special expertise in the development and stewardship of the earth's mineral and energy resources. The CSM enjoys Exemplary Institute and Enterprise status, recently granted by the State Legislation. Colorado School of Mines offers all the advantages of a world-class research institution, but with a size that allows for a high level of personal attention. With a student body of approximately 4000, CSM has a student/faculty ratio of 15:1, and an average undergraduate class size of 30. CSM features an innovative curriculum that emphasizes practical, hands-on experience, and an interdisciplinary approach to solving problems of importance to society.
CSM fully understands and is supportive of national security issues and is actively involved in major national projects such as the Yucca Mountain Radioactive Waste Repository program and the Energy Security program, both of which have major national security and safety implications.

Perhaps the best description of the mission of the Colorado School of Mines is given by its President, John U Trefny: I quote: "At Mines, we are interested in the education of the whole person, and endeavor to infuse our graduates with the skills, knowledge and character to have successful careers, lead lives of great fulfillment, and make a difference for the betterment of humankind". The outstanding and forward-looking Board of Trustees, which is the governing Board of the School, jointly with the executive management, spare no efforts to fulfill our mission and are always mindful of the needs for increased national security. Mr. Chairman, Members of the Subcommittee, I hope that from my brief introduction of the Colorado School of Mines you might sense that, for both students and faculty, to be a member of the Mines' community it is not only a privilege but a great honor as well.

The Edgar Experimental Mine at the Colorado School of Mines

Since the 1930s, CSM has maintained and operated an underground laboratory and training facility just outside the city limits of Idaho Spring, Colorado. This underground facility was chiefly an old silver and secondly a gold producing underground operating mine. The Edgar Experimental Mine is fully owned by the State of Colorado, and managed by the mining engineering department. Although the Edgar is categorized an inactive mine, it has been utilized during the decades to carry out special research and training activities by the students and for different companies, state and federal agencies and authorities. Consequently, intensive explosive usage has been in a continuous basis for excavation of new tunnels and chambers, development and testing of new explosives, new mining and ground support systems and for the training of our students and special experts from the industry and different agencies. The previously mentioned activities are requiring using and storage of significant amount of explosives.

Other academic units of CSM have also used special explosives for exploration purposes, but this utilization of explosives has been discontinued in recent years.

The Need for Using Explosives at the Experimental Mine and in general at the school

Although there is a strong interest and development in the hard rock mechanical excavation technology, the extensive use of explosives for rock fragmentation and excavation in a variety of areas, in demolition of old infrastructures, and other special purposes is very cost effective and widely used. Therefore it is of the utmost importance to educate and train the experts in the mining and underground industries for safe use of explosives.

Research

In the past five years, much of the research carried out at the Edgar Experimental mine by both government agencies and private companies have focused on the use of

explosives and the development of new energetic materials for excavation. Without striving for an exhaustive list I'd like to mention a few research programs. One major explosive manufacturer company has performed studies to quantify the gaseous products of fumes from the detonation of various explosives. The study assisted the manufacturer in developing products that are environmentally better for use in different coal mines. During this research program, the company has also tested newly developed electronic detonators that allow incredible precision in detonation timing. This research project also resulted in the development of hundreds of feet of new drifts in the mine.

Another smaller research development company carried out research to develop several new products for the mining industry. One, the Boulder Breaker, allows for safer secondary breakage of oversized rocks at quarries without causing dangerous fly rock, which is the result of conventional explosives. Another product that the company developed is a device that is able to deliver an explosive charge to loose rocks in vertical underground openings that are not accessible safely to human.

One of the major national agencies recently awarded two projects to the mining engineering department to develop safer methods of creating underground openings with the use of explosives.

Faculty of the mining engineering department jointly with industry carried out research to develop a better technology for sampling the lunar surface by utilizing explosives. Also, research programs are on the utilization of explosives for material joining, and for using explosives for special projectiles.

Training

The main reason that Colorado School of Mines requires the ability to use explosives is for educational and training purposes. Through various classes offered by the Mining Engineering Department for students across the Campus, part of their course work is to learn safe methods of using industrial explosives for excavation of rock and other purposes. In classes delivered at the Experimental Mine, students are actually using explosives under the strict supervision of a licensed individual and the practice/experience is carried out in compliance with all the laws and regulations of the Bureau of Alcohol Tobacco Firearms and Explosive (BATFE) and the State of Colorado.

Training is also carried out at the Experimental Mine organized by the Special Programs and Continuing Education (SPACE), which is a special unit of the Colorado School of Mines. Trainers from this unit jointly with the Edgar personnel serve the needs of those who are enrolled in a non-degreed educational program. A well organized safety training program is carried out for personnel from operating mines, and from construction industry. As part of some of these trainings, the mine safety trainers of the SPACE group utilize the Experimental Mine and the Mining Department staff to train special clientele who are using explosives. The most notable of these groups are

personnel from the Department of Homeland Security, the United States Secret Service, and the United States Army.

Permits, Protocol of Explosive Usage, Transport and Storage on the Properties of the Colorado School of Mines

The CSM has always been mindful of the safe use and storage of explosives at the CSM premises, but specific emphasis has been give to security after 9/11.
With the leadership and approval of the Executive Vice President, Nigel Middleton, the CSM developed a comprehensive protocol for the safe use, transport and storage of explosives on the CSM premises. The purpose of this protocol is to develop and apply safety procedures and requirements to carry out demonstrations or testing of explosives at Colorado School of Mines. This document provides guidelines and standards for the use, manufacture, possession, storage, transport and/or disposal of explosives or blasting agents in the interest of the safety and security of the students, employees and the general public, as well as the protection of properties. This protocol has been developed according to the existing rules and regulations of the Department of Justice, Bureau of Alcohol, Tobacco and Firearms (BAFTE P4500.7) and the Division of Oil and Public Safety of the State of Colorado (CRS 1998) requirements with the proviso that the rules of the previously mentioned State and Federal agencies will have precedence. The responsibility of compliance to this protocol and to any State and Federal regulation related to the subject matter has been transferred by the Executive Vice President to the Head of the Mining Engineering Department.

To this end, each responsible person who is an employee of the CSM and is involved in using, storage, transporting or policy-making related to explosives has been required to obtain a "Responsible Person Letter of Clearance" from the U.S. Department of Justice, Bureau of Alcohol, Tobacco, Firearms and Explosives, National Licensing Center. Copies of these licenses of each responsible person including the Head of the Mining Engineering Department are on the file in the department for inspection.

Mr. Chairman, Members of the Subcommittee, please allow me to provide some further information concerning different permits as we understand it at the Mining Engineering Department.

The Colorado School of Mines, Mining Engineering Department has acquired and holds all State and Federal permits to manufacture, store and use explosive materials that any private corporation located in the same vicinity would need to acquire. The two agencies that the Colorado School of Mines has permits from for the storage and use of explosives are the BATFE and the State of Colorado Department of Labor and Employment, Division of Oil and Public Safety. Both of these agencies regulate and enforce federal and state laws regarding the storage and use of explosives. Both of these agencies regularly visit our facilities.

The BATFE requires the Colorado School of Mines to have a site license for the purpose of purchasing, storing and manufacturing explosives. Also, the BATFE requires all persons working with or in the position of directing the use of explosives to have a "responsible person letter of clearance" license after an extensive background check. We at CSM consider this as a minimum requirement, but one insufficient to practically handle and use explosives for excavation or other purposes. The BATFE requires that all persons possessing or directing the utilization of explosives have not committed a felony and have a United States citizenship. As I have mentioned earlier in my testimony, all employees of the Colorado School of Mines that may be required to use or direct the use of explosives have passed the background check required by the BATFE. According to BAFTE regulation, CSM has a Type I (applicable to high explosive) explosive magazine. Confusingly enough, according to the State of Colorado we are required to possess a permit of Type III magazine, which we do in fact possess, and which is equivalent to the ATF Type I magazine.

Colorado Department of Labor and Employment, Division of Oil and Public Safety require entities in the State of Colorado to have three types of explosive permits. The first is an organizational permit called a Type II permit that allows the holder of the permit to conduct activities requiring explosives. The holder of a Type II (organization permit) requires having for its explosive magazine a Type III magazine permit. The Colorado School of Mines obtained and in possession of such a State's permit as well.

Lastly, the Division of Oil and Public Safety requires anyone of the organization holding a Type II permit who would handle explosives, to obtain a Type I permit as well. To obtain a Type I permit, a person must pass a background check with a higher standard then that required by the BATFE. Also individuals of Type I permit holders to maintain their license are required to take a written test covering state explosive laws and obtain a score of 90% or better every three years. The Type I permit is valid for only one Type II organizational permit.

Security of Explosive Storage at Colorado School of Mines, Edgar Experimental Mines

As I have testified earlier, Colorado School of Mines and the Mining Engineering Department are required and do in fact satisfy all applicable State and Federal laws governing the purchase, storage, use of and manufacture of explosives.

The explosives at the Colorado School of Mines, Edgar Experimental Mine site, are stored in a tunnel-type magazine classified according to the ATF regulation as Type I and according to the State regulation as Type III magazine. This 8 foot by 8 foot tunnel magazine penetrates into an inclined hillside of hard granite gneiss rock for a length of 60 feet. At a length of 40 feet and at a length of 52 feet are two passages that propagate to the rock mass at right angles to the main opening for distances of 20 feet and 30 feet respectively. These side openings (drifts) are also 8 foot high and 8 feet wide. The entrance to the magazine is secured with a ½ inch thick steel door with two

5-tumbler 3/8 inch hasped padlocks. Both of these padlocks are shielded with a ½ inch thick steel guard covering box. The hinges of the main door are welded to prevent disassembly. Each of the internal side drifts have their own steel doors made of a wire mesh and are also individually locked with small padlocks. The first side opening serves as storage for detonators and the second side drift is storage for all non-detonator explosives. As it is well known, the detonators are required to be stored separately from the explosives.

There are only two sets of keys to the explosive magazine at the Edgar Experimental Mine. Both sets are accessible only by employees of the Mining Department with valid state and federal explosive Permits. One set is controlled exclusively by the Experimental Mine Manager, while the other set is controlled by the head of the Mining Engineering Department. Both sets of keys are locked up in undisclosed steel boxes at locations far away from the Experimental Mine when not physically being used by a licensed permit holder faculty or Mine Manager.

The magazine is furnished with an electronic alarm system. This alarm system is wireless and is triggered if the main door of the magazine is opened without disarming the system from an undisclosed location. Each licensed responsible person has his/her own code. Only authorized employees with valid explosive permits are allowed to disarm the electronic security system. If the magazine alarm is triggered, a siren is initiated and an electronic signal is sent to the Colorado School of Mines campus security. The Campus Safety Office immediately informs and alerts both the Idaho Springs City police department and the Clear Creek County Sheriffs department. Both of these agencies have been given specific knowledge concerning the Experimental Mine's magazine as required by State laws.

It is required that the magazine be physically entered and checked by a person having a valid Type I permit at least once every 7 days. The main door of the explosive magazine is visually checked at least daily by an employee at the mine site. When no employee is working at the mine site, a gate approximately 2000 feet away remains locked.

The quantity of explosives in the magazine are inventoried at least once every 30 days and compared with an explosive log system that is also located within the magazine. Often at shorter intervals spot checks are made of that type of explosive that are more often used. This is often done while explosives are gathered for use.

All explosives remain in the magazine until such time that they are required for use. No temporary storage magazines are used at the Experimental Mine.

Brief history of the security of the magazine and the process to be followed in case of security of a safety violation

The Colorado School of Mines has an exemplary security record. To my best recollection we have had only one incident worthy of mention. Over ten years ago, before our electrical security system was in place, a few high school kids obtained the keys to the magazine due to human error, which in this case was a brief lapse of attention by the Mine Manager at that time. They entered the magazine during the night and removed a small amount of explosives. Upon discovering the incident the next morning, the Mine Manager immediately informed the Campus Security Officer, the Sheriff Department and the Idaho Springs City Police department. Within 24 hours, the incident has been reported to the ATF and Colorado State's appropriate authorities.

All the missing explosives were subsequently found and returned to the magazine, and the perpetrators were apprehended within a very short time due to the coordinated effort of the Mine Manager and all the appropriate law enforcement agencies. The incident was more mischief than a seriously planned violation of safety against any human or property, and since the incident, we introduced new security measures such as the electrical surveillance system and better protocol and storage of the keys to the magazine.

We have reviewed our security and safety system with the representatives from both the State agency and ATF and they have provided very valuable advice, suggestions and support toward a better security system. We have a very cordial and professional relationship with those agencies, and we are happy to accommodate both their declared and undeclared site visits concerning our security system.

As I have mentioned earlier in my testimony, since the aforementioned incident we have not had any further problem or incidents, and there has not been any explosives stolen or missing from our well-kept inventory. We are considering some further fine tuning of security system with the establishment of an infrared motion detector system in addition to the existing one.

Monitoring of Explosive Use

It is required by both State and Federal Law, (Subpart G of T.D. ATF-87, 46 FR 400384, August 7-1981) the all explosives while being transported from the magazine to the site where they are to be used and while they are being prepared for use must physically be in the presence of a holder of both state and federal explosive permits. We strictly observe and are in compliance with this regulation. Both State and Federal laws allow a student without valid permits to physically handle explosives as long as they are always in the presence of a valid permit holder. We are strictly in compliance with this requirement and require that our industry customers should be in possession of the appropriate license, otherwise we will provide explosive handling service to them by a licensed employee.

Traceability of Explosives

Explosive traceability and security paperwork are required by State and Federal laws. We are in full compliance with this requirement by keeping an accurate record of the usage of all explosive and electronic detonators in the file at the Edgar Experimental mine site. We keep logs for the use/inventory of both the detonators and the quantity of the explosives in their respected storage drifts and by doing so we can keep track of the quantity and type of explosive material used at any time in the mine. These records are regularly inspected by State and ATF inspectors from time to time. A compiled inventory and utilization record is kept in the mine's office for at least 7 years after the explosives were used. Also records are stored in the mine office of all of the deliveries/purchase of explosives with a brief record of the blasting patterns.

My personal observations and suggestions for consideration

1. First and probably most importantly, we need one Federal agency (i.e. ATF) that has a generic responsibility to inventory and maintain an accurate record for all explosive magazines and their responsible persons in the USA. Since background checks are required for all licensed persons and they are tied to an organization permit or magazine permit that can easily be established because all the background checks are done through the appropriate office of the Department of Justice.

2. Secondly, the permitting process requirements for educational or research institutions, companies and responsible persons should be better coordinated between the States and ATF although it should be serious background check requirement as a minimum, should the process be streamlined. Although I am not conversant on the different level of background check requirements, it is hard to explain why some States require an additional background check that is already required by ATF. The paperwork requirement is very ambiguous and cumbersome.

3. Thirdly, the security and safety requirements of handling and storage of explosives for educational and research use, but probably even for industrial purposes, vary widely from state to state. It would be reasonable for the ATF to establish a baseline requirement of what needs to be followed by the institutions. Based on this base line requirement, institutions should establish a protocol for explosive storage and handling within their premises.

4. Fourthly, a clear reporting mechanism should be established for each magazine and explosive holder institutions and agencies. Colorado School of Mines has decided to report any incident to all agencies that may have something to do with such an incident. Since, if stolen, explosive materials can be easily transported and used in any state in the union, it should be mandatory that institutions and agencies should report incidents within 24 hours to ATF as the coordinating agency of the federal government.

5. Fifthly, the Department of Homeland Security should review the security and safety of the explosive magazines of educational and research institutions and provide professional and financial assistance to bring the system to the required minimum.

6. Finally, the educational and research institutes that use explosive and are in full compliance with the ATF and State regulations should be clearly exempt from any liability and responsibility if in a later stage any former students are involved in unlawful activities.

Mr. Chairman and Members of the Subcommittee, I appreciate the opportunity to testify today and share with you information on the system that we have established at Colorado School of Mines. We are proud of our record, but on the other hand also share your concern that explosives in the wrong hands remains the preferred weapon of terrorists, and so the safe use of explosives and their secured storage requires a coordinated and cooperative effort between legal users and law enforcement agencies.

Thank you for allowing me the opportunity to address these issues. I am happy to answer any questions you may have.

Sincerely,

Tibor G Rozgonyi